

Operating Instructions for the **Futura Egg-Quality-Measuring-System** **Version 3/A**



Operating instructions last revised on January 16th, 2006

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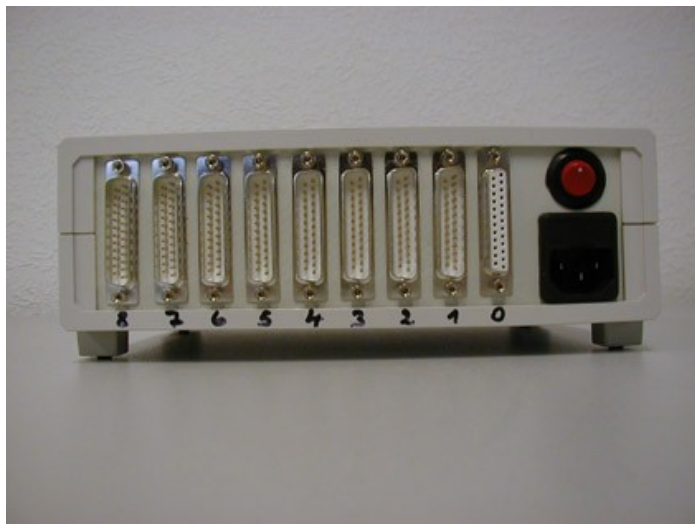
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Installation

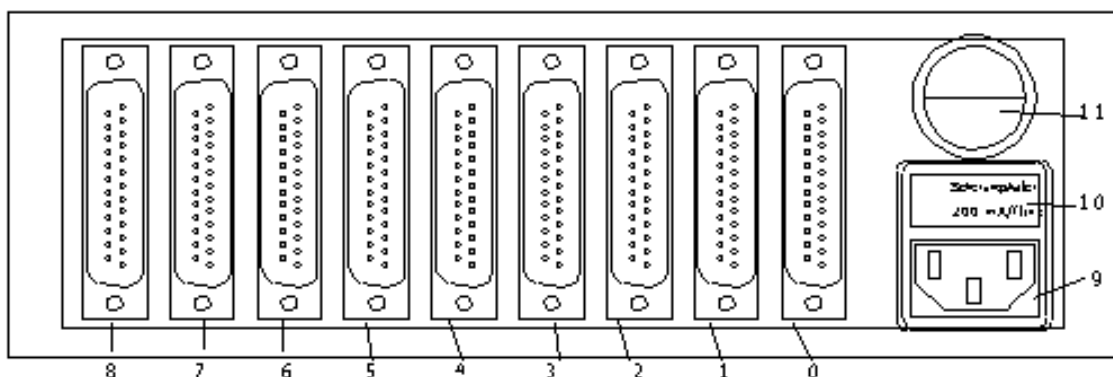
Hardware

Switch off the PC and connect the data processor with one of the COM-Ports of your PC. For this purpose use the electronic lead that is attached to the data processor (9 pin Sub D Connector like PC mouse). Connect your scale via the special lead which is delivered with the scale. This lead has two 9 pin Sub D Connectors. It is specially designed to use a scale with our data processor. The scale needs a power source. This may be accomplished via batteries or an AC adapter. Please follow up users-manual of your scale. Connect the albumen height gauge via the 5 pin D Connector to the data processor. Connect the Minolta CR 10 via the 25 pin sub d connector to the data processor. Connect the Mitutoyo shell thickness micrometer via the 25 pin sub d connector to the data processor.

Display of FUTURA data processor back and front side.

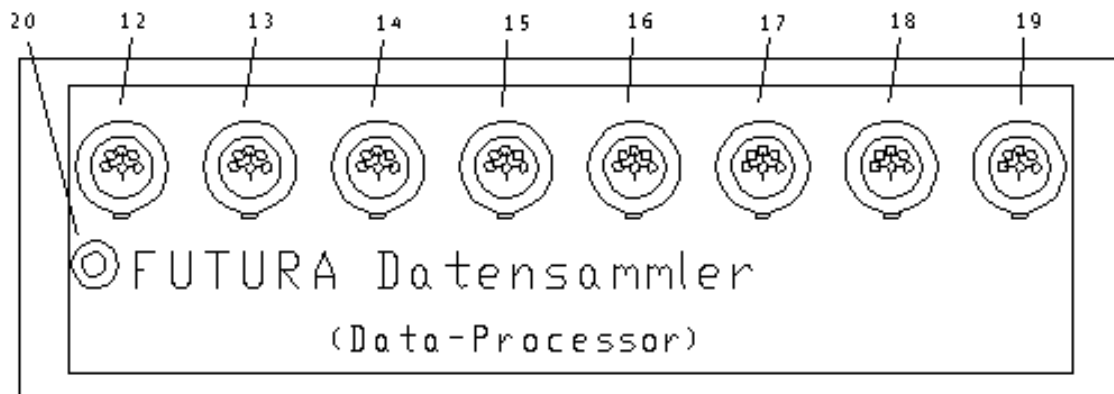


- 0. PC Connector
- 1. Connector for egg shell tester
- 2. Connector for electronic scale
- 6. Connector for shell colour reader
- 7. Connector for yolk colour reader
- 8. Connector for shell thickness measurement screw
- 9. Cold device socket
- 10. Fuse bracket
- 11. Powerswitch





- **18.** Connector for the albumen height gauge
- **20.** Electronic light control



Software

- Insert the CD in your CD ROM Drive
- Click on "My Computer" and at the icon of your CD ROM Drive
- Start the program "Setup.exe" by double click on that icon
- If you have started the Setup program, the FUTURA-Logo will show up. Click at "weiter" or "continue"
- Now you will be asked to insert your name.
- The program gives you a directory in which it wants to copy the program. If you want to install the program at another position, click at "Search" and choose another directory.
- Then you will be asked if you want "normal", "minimal" or "user defined" installation. Choose "normal".
- Click on "Weiter" or "Continue" until the setup program starts to copy the program files on your hard disk.
- Wait until the setup is finished.
- Click on "Beenden" or "Finish"

If everything has been done without any error-messages, the program is installed. Now you can start the program by clicking on "start", choose "program files" and "haugh". After program installation you have to choose a COM-port. Take a look at: Choose COM-port. It is also necessary to calibrate the albumen height gauge and the Minolta CD-10

If you have any problems with the installation or usage of the program, please contact:

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Troubleshooting

Error:	Possible Reason:
Lamp of power control doesn't glow:	Check if leads are in sockets and switches are turned on.
Minolta CR 10 gives no data:	First control if every lead is connected right. Maybe you have chosen the wrong COM-port. Stop the measurement and switch off the Minolta CR 10. Now choose the other COM-port and calibrate the Minolta CR 10 again.
Minolta CR 10 can't calibrated:	The communication between CR 10 and PC is disturbed. Maybe because of a defect on your PC or on the Minolta CR 10. First check the COM port adjustment. If this doesn't help you may try to run the system on an other PC. Another cause may be an exchanged or defect lead.
No data from scale and albumen height gauge:	There is no communication between the PC and data processor. The reason can be some kind of damage at your PC or the data processor or something in the software. First check the settings of the COM port. If this doesn't work, you can try another PC. Another reason can be mistakenly exchanged leads. The lead which is fixed to the data processor has to be connected to the COM port of the PC. The scale is connected to the data processor via a lead with two 9 pin sub d connectors.
Albumen height gauge gives no data but scale gives data:	There might be damage in the albumen height gauge or the data processor. Check connection between data processor and albumen height gauge. If this doesn't work, ship the devices (albumen height gauge and data processor) to us for repair.
Scale gives no data:	Use only the leads we have delivered with the system. Other leads will surely not work. Another reason could be a miss-configured scale. You have to choose the following parameters: Baud-Rate: 2400 Baud, 8 Bit, no Parity, 1 Stopbit, Stability: Yes, Autoprint: No To do this, please take a look at the users manual of your scale
Albumen height gauge gives wrong results:	<ul style="list-style-type: none"> • Mistake in calibration procedure: please repeat the calibration procedure • Damaged albumen height gauge. • Moisture in albumen height gauge.
Albumen height data isn't stored:	Dirty albumen height gauge. Clean your albumen height gauge with a moistured cleaning towel. Don't use any aggressive cleaning detergents.

Usage

Start Program

First check if all devices are connected with power and switched on. Also turn on the switch of the data processor. Click on "Start" at the windows-task-bar. A menu will be opened. Choose "program files". Another window will be opened. Select "Haugh" and click at the left mouse-button. You could also create an icon on your desktop and click at this. After program-start, you will see the following screen:

FUTURA - Egg Quality - Measure - Software (c) 2003 by Bröring Informationstechnologie

File Configuration About

Test series - stock

Test-ID N° Production date

Date 21.01.2004

Egg group

Operator Test

Origin Test

Remarks

Licence for:

FUTURA

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Table of measurement values

EGG No.	WEIGHT g	SHELL COLOUR L a b	AIRCELL mm	DEFORMAT µm	BREAKRESIST. g N	ALBUMEN mm	HAUGH UNIT	YOLK COLOUR ROCHE	SHELLTHICKNESS
1	50	55	10	10	10	10	0	10	10

EGG No. WEIGHT g SHELL COLOUR % AIRCELL mm DEFORMAT µm BREAKRESIST. g ALBUMEN mm HAUGH UNIT YOLK COLOUR ROCHE SHELLTHICKNESS

☐ Bloodstains

Remarks

☒ Automatic Process

Start Measurement F5 = New Test Print MS Excel Statistics Exit

English

In the upper menu-bar you will find the following points:

- File (Datei): "New test row", "Backup data", "Restore data", "Print" (prints the actual test row) and "Quit".
- Configuration: Configuration of the program and calibration of several devices
- About (Info): Information about the actual version of your program

In the lower menu-bar you will find the following points:

- Start Measurement
- F5 = new measurement
- Print = print actual test row
- MS Excel = create an Excel file with data of actual test row

- Statistics
- Exit = leave Program

Beneath the lower menu-bar you will find a small remark which shows that you are working with "Automatic Process". That means the Program will work automatically after you have started the measurement. If you click on the remark it changes and you are now able to see every step of the measurement, this is useful to get used to the Program and to look for faults.

Another button is on the right side of the Test-ID-N. If you click at this the following window will be opened:

The screenshot shows a window titled "Store data". At the top, there are search filters: "Test-ID from" and "Egg group from" (both with input boxes and "to" labels), "Date from" (with a date picker), and "Operator" (with an input box). A "Delete" button is located to the right of these filters. Below the filters is a table with the following data:

Test - ID	Date	Operator	Origin	Egg group	Production date	Number tes
1	21.01.2004	Test	Test			
2	18.02.2004					

At the bottom of the window, there are four buttons: "Back to Measurement", "Delete Measuring row" (with a trash icon), "Print all" (with a printer icon), and "MS Excel" (with an Excel icon).

Now you are able to view and work with old test rows. You also have the opportunity to select by a variety of filters. You can limit the displayed measurements by test-ID, egg group, date and operator.

With the buttons on the bottom of the screen you have some additional possibilities. Just click on the test-ID you want to work with. Then click on the "Back to Measurement" button and the chosen row will be displayed there. Or click on "Delete Measuring row" if you need to delete a whole row. Furthermore you can have a print-out of all currently **shown** measuring rows or export them to Microsoft Excel, if installed.

If you want to view **all** measuring rows again, you click on "Delete" in the top right corner of the window.

Program sequence

Now we would like to show you in which sequence the program will work after starting a measurement row. The program sequence depends on the chosen devices. If you only choose scale and the albumen height gauge then only these windows will show up.

How to choose the desired devices is explained in Set Appliance selection and Measurement values.

After starting a new test row, the first thing to do is weighing the eggs.

You will see the following window:

FUTURA - Egg Quality - Measure - Software

File Configuration About

Test series - stock

Test-ID N°

Date 27.11.00

Operator

Origin

Enter Weight

Please place the egg on the scale ! Measurement starts automatic !

62.5 g OK

OK / Forward Cancel

Table of measurement values

EGG No.	WEIGHT g	SHELL COLOUR L a b	AIRCELL mm	DEFORMAT µm	BREAKRESIST. g N	ALBUMEN mm	HAUGH UNIT	YOLK COLOUR ROCHE	SHELLTHICKNESS mm
19									
20									
21									
22									
23	62,4								
24	62,5								

EGG No. 24 WEIGHT g 62,5 SHELL COLOUR % AIRCELL mm DEFORMAT µm BREAKRESIST. g ALBUMEN mm HAUGH UNIT YOLK COLOUR ROCHE SHELLTHICKNESS mm

☒ Bloodstains REMARKS

Start Measurement F5 = New Test Print MS Excel Σ Statistics Exit

☐ Automatic Process

Put the egg on the scale and click on "OK/Forward ". The measurement works automatically. Afterwards you'll see the screen of the next device you have chosen. Just follow the instructions.

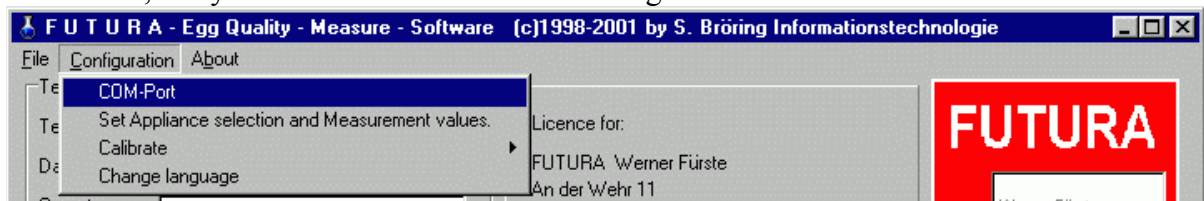
Printing

If you want to print the actual test row you just have to click on "File" and then on "Print".

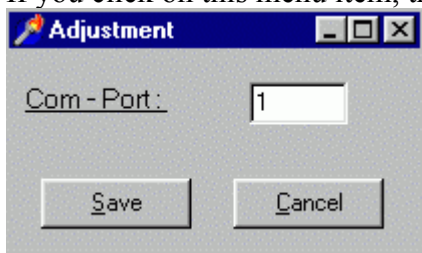


Define Com Port

You must tell the program at which serial port the data processor is connected to the PC. To do this, you first select "Configuration" and then "COM-Port".



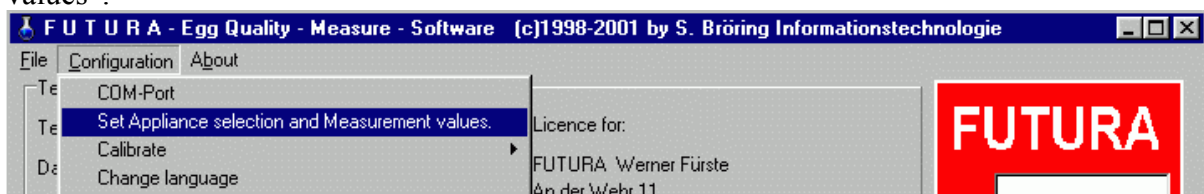
If you click on this menu item, the following window will be opened:



Here, you can specify your COM-port. In most cases the right choice should be 1 or 2. If you are not sure, test both of them. If your system has more than those two COM-ports you will perhaps to try another value.

Set Appliance selection and Measurement values

First select "Configuration" and then select "Set Appliance selection and Measurement values".



Afterwards you'll see the following window:

The screenshot shows a software window titled "Measurement values - table Min/Max - values". It contains two columns of settings. The left column, under the header "activated Mesurement", includes checkboxes for "Weight", "Shell colour", "Air cell height", "Deformation / Break resistance", "Albumen height", and "Haugh Unit". The right column, also under "activated Mesurement", includes checkboxes for "Yolk Colour", "Measuring yolk colour", "Shell thickness", "Bloodstains", "Notes", and "Scale fast (200,8,'n')". There are also radio buttons for "Canadian Egg Shell Tester" and "BMG 1.2 mc/D" under "Deformation / Break resistance", and radio buttons for "TTS-Colorimetre" and "Minolta CR10" under "Measuring yolk colour". Numerical input fields for min/max values are present for "Weight" (25, 100) and "Albumen height" (1, 13). At the bottom are "OK" and "Cancel" buttons.

Now click on the devices you want to work with. Also define min and max values. Results which are not between Min and Max will be ignored, that's why you should choose the values carefully. If you are ready just click "OK". If you don't want the changes to be saved just click "Cancel".

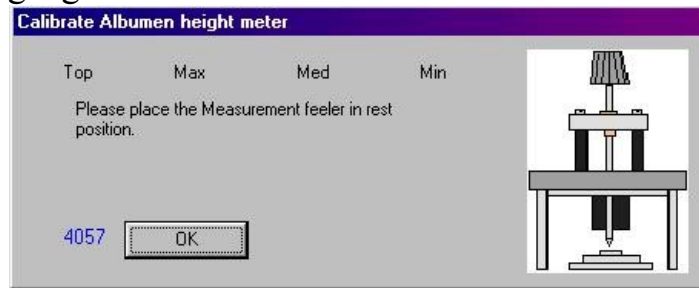
Calibrate the albumen height gauge

The albumen height gauge transfers an electrical voltage to the data processor. To evaluate the correct albumen height, you have to calibrate the albumen height gauge. This should be repeated every second month or if you changed the location in which you use the devices or if it has been transported, repaired or if the software is newly installed. For the calibration you need:

- The albumen height gauge.
- The data processor.
- The calibration plate.
- A flat surface (e.g. the FUTURA assessment work table).
- And a PC on which you already installed the Software.

First clean the things you use (especially the working table, the albumen height gauge and the calibration plate).

Place the calibration plate on the working table and put the albumen height gauge over it:



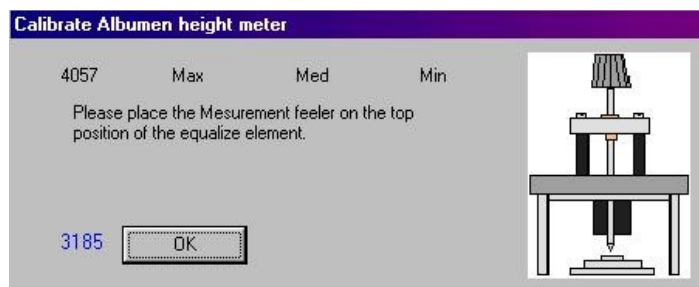
Choose the menu-item "Configuration" and select "Calibrate", "Calibrate albumen height meter".

The window shown on the left will be opened. First you will be asked to put the albumen height gauge in neutral position.

Place the albumen height gauge on the table and do not touch the needle.

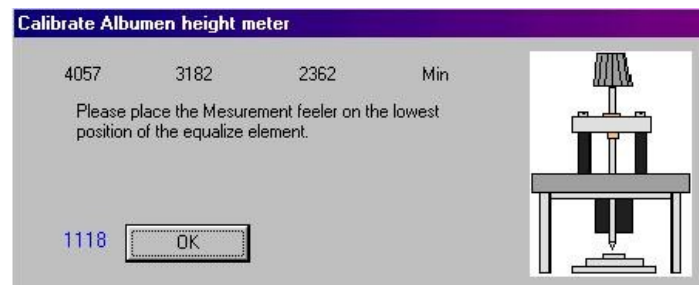
Then, you press the "Return" key on your keyboard.

If you get an error message at this point, there is a problem with the communication between PC and Data Processor.



After this, you will be ordered to place the needle at the top of the calibration plate.

Press the knob of the albumen height gauge until it reaches the top position. Keep it in this position and press the "Return" key on your keyboard.



Repeat this with the lowest position.

After this procedure, the albumen height gauge is calibrated. Check if the calibration is correct by measuring the steps of your calibration plate. Compare the values you get from the PC with the calibration plate or something else.:

- Highest position: 9.00 mm
- Middle position: 7.00 mm
- Lowest position: 4.00 mm

The deviation should be less than ± 0.02 mm.

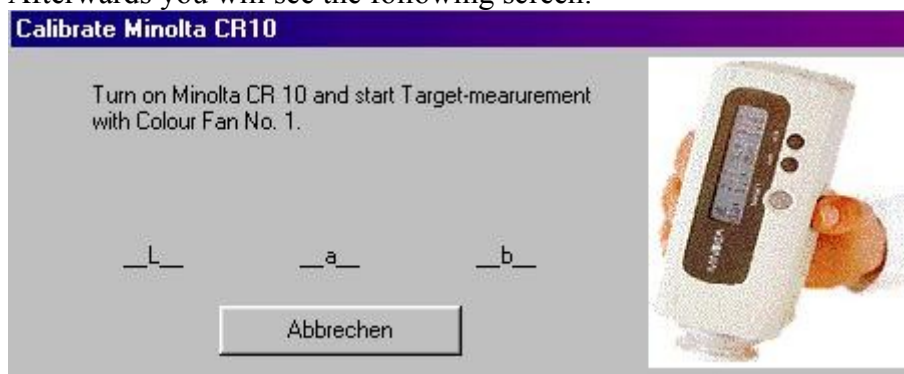
Calibrating Minolta CR 10

The Minolta CR 10 sends an electrical sign to the data processor. This value will be send to your PC. To get the exact yolk colour the CR 10 hasto be calibrated correctly. This should be repeated every day or if you changed the location or if it has been transported, repaired or if the software is newly installed. To calibrate the Minolta CR 10 you need:

- The Roche colour fan.
- The FUTURA data processor

Now choose service "calibration" and then choose: "Minolta CR 10 ..."

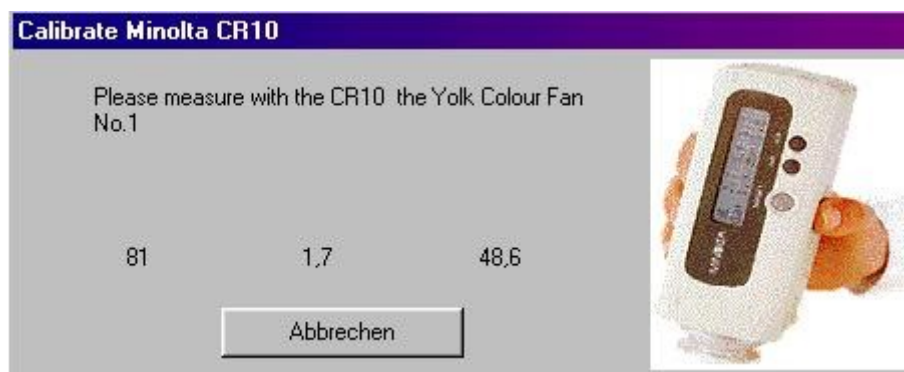
Afterwards you will see the following screen:



Now you have to do a target-measurement:

First switch on the Minolta CR 10. Put the CR 10 on colour number 1. Press the "target" button on the CR 10. Now press the single button (covered by the forefinger on the picture in the upper right corner).

Afterwards you will be asked to repeat the measurement with colour 1. This time you have to do a non-target-measurement. Just press the single button.

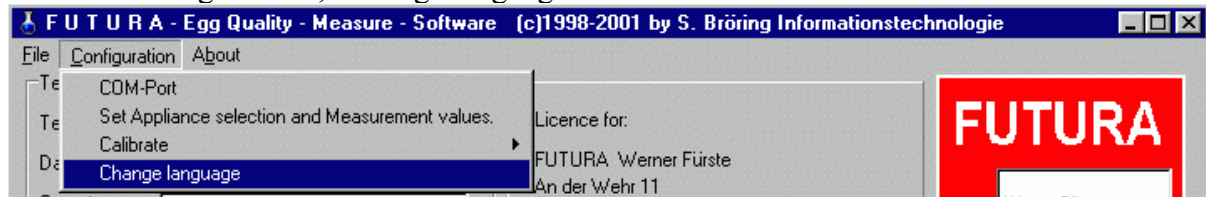


Follow the instructions until the calibration is done.

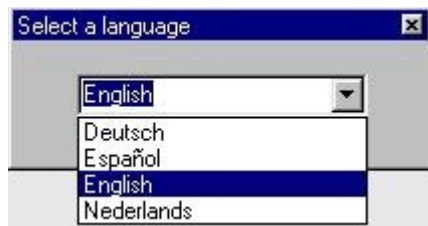
Now the albumen height gauge and the Minolta CR 10 are calibrated and you can start your measurements.

Choose Language

Choose "Configuration", "Change language".



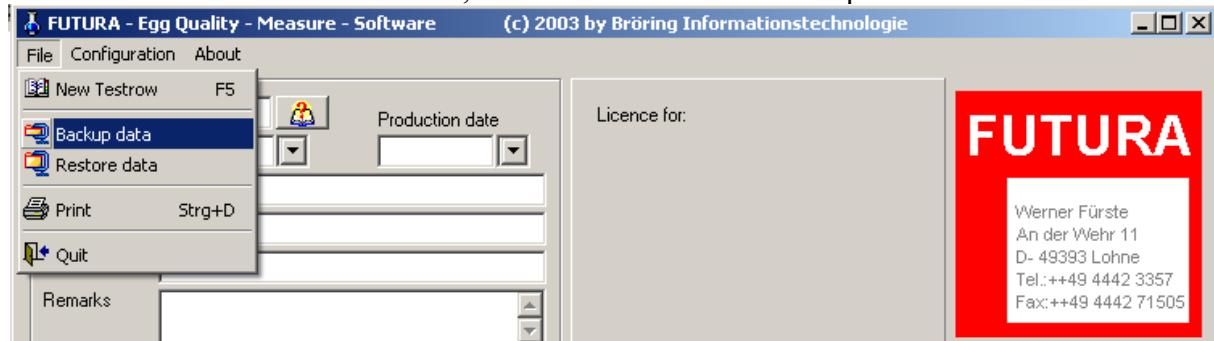
Then, the following Window will be opened:



By clicking on the arrow right from the word "English", you open a table with all the languages you may choose. Choose the language you want to work with then click on the "x" in the upper right corner of the window.

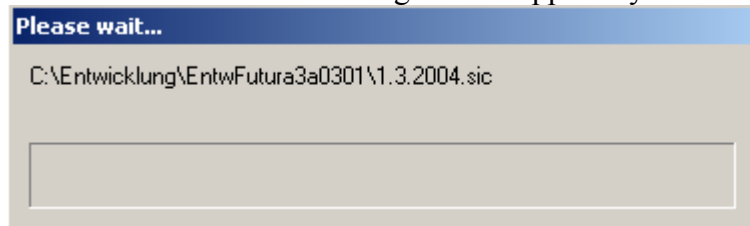
Backup Data

Choose "File", "Backup data".



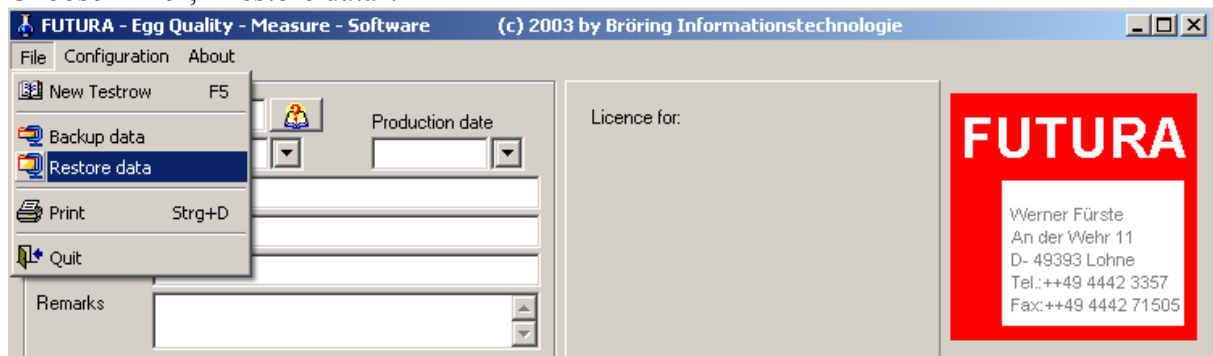
After this a standard "Save as..." dialogue will appear. Please choose a filename which suits you best. The default setting is the current day, formatted as: DD/MM/YYYY (D = day, m=month, y=year).

While the data is being back-upped you will see the following window:



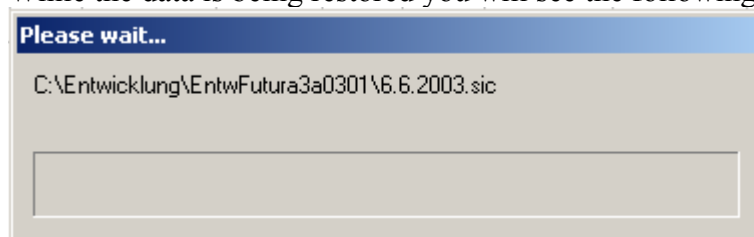
Restore Data

Choose "File", "Restore data".



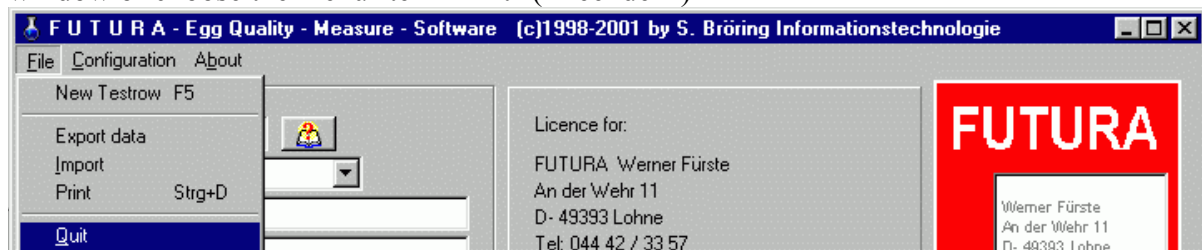
After this a standard "Open..." dialogue will appear. Please choose a file which you want to restore. NOTE: All current data will be overwritten.

While the data is being restored you will see the following window:



Terminate Program

To close down the program, you can simply click at the "x" in the upper right corner of the window or choose the menu-item "Exit" ("Beenden")



Start Measurement

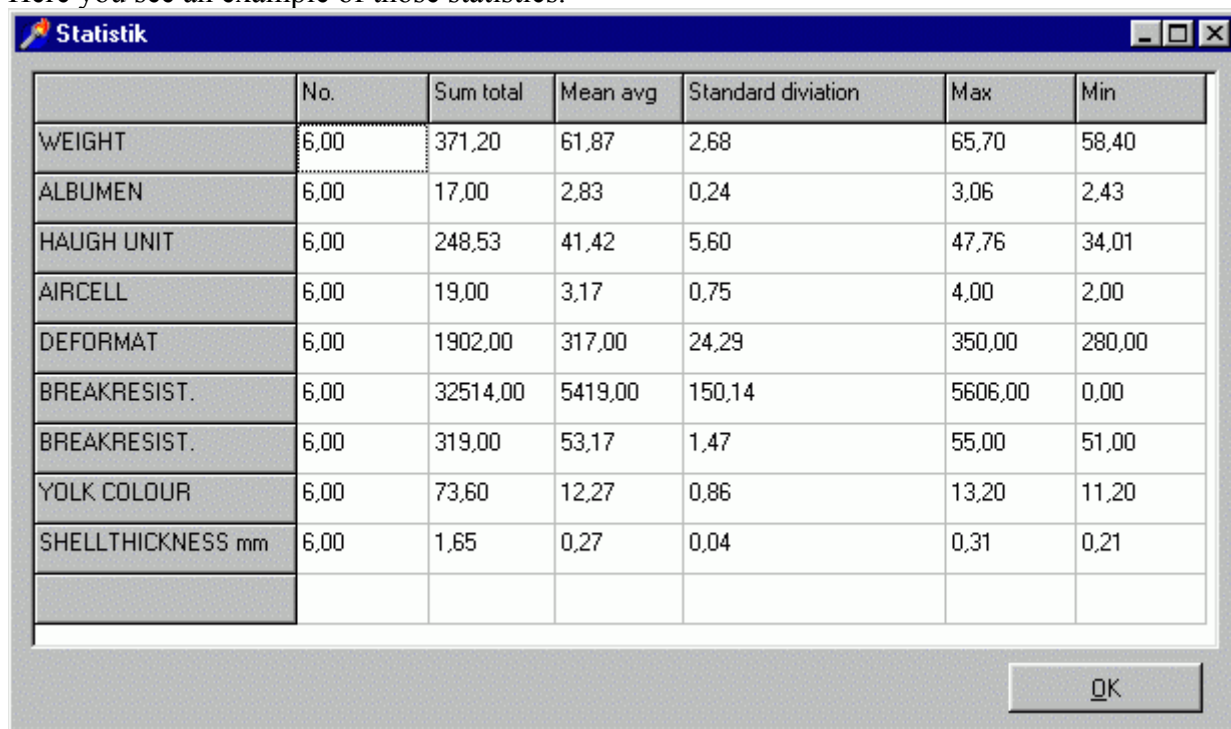
To start a measurement just click on the "Start Measurement"-button.

Statistics

On the main window you will find a button named "Statistic".

If you click on it the program will create a statistic with several data of the actual test row.

Here you see an example of those statistics.



	No.	Sum total	Mean avg	Standard diviation	Max	Min
WEIGHT	6,00	371,20	61,87	2,68	65,70	58,40
ALBUMEN	6,00	17,00	2,83	0,24	3,06	2,43
HAUGH UNIT	6,00	248,53	41,42	5,60	47,76	34,01
AIRCELL	6,00	19,00	3,17	0,75	4,00	2,00
DEFORMAT	6,00	1902,00	317,00	24,29	350,00	280,00
BREAKRESIST.	6,00	32514,00	5419,00	150,14	5606,00	0,00
BREAKRESIST.	6,00	319,00	53,17	1,47	55,00	51,00
YOLK COLOUR	6,00	73,60	12,27	0,86	13,20	11,20
SHELLTHICKNESS mm	6,00	1,65	0,27	0,04	0,31	0,21

OK

It is also possible to create statistics of test rows in the archive. Therefore bring the test row out of the archive back to the main window and click on the statistic button.

Remarks

Please act conforming to the normal safety-procedures by using electrical equipment. The system is electrically connected to the case of your computer. This computer has to be in a clear technical state. Any damage at your PC or the power-system could result in reasonable harm. If you are in doubt, please let everything to be checked by a qualified technician. The measured results that you will get from the system are only as good as the applied calibration. Insufficient calibration will result in wrong measuring results.

The calibration procedure has to be done precisely.

Technical Description

The Hardware of the FUTURA-Egg-Quality- Measuring-System version 3/A consists of the following basic components:

- Data processor: Microprocessor with connection for PC, scale an albumen-height-gauge
- Electronic scale
- FUTURA Albumen-Height-Gauge
- Lead from scale to data processor
- Calibration-Plate

Optional testing equipment are:

- Mitutoyo measuring screw
- EGG shell tester
- Minolta colour reader for shell and yolk colour
- several electronic leads

The Data is transferred via a serial interface (RS-232) to a PC. We use a standard 9-pin Sub-D-Connector. The system can be operated on COM1 or COM2 . For the use with a 25-pin Connector at the PC, you can use a standard adaptor which you should get in your local PC-Shop.

The system gets its power from the serial-interface of the PC (like older PC-Mice) and needs no additional power-source. The albumen height gauge consists of a position sensor which works like a linear-potentiometer. This potentiometer is connected to an AD-Converter, with 12-bit resolution.

The data from the scale are transmitted via the same serial interface. The system is designed for usage with a standard PC-System without any modification. We expect you to use a PC on which you can run Windows 95, 98 or NT. The PC should fit to the following minimum requirements:

- Operation system Windows 95
- Intel Pentium 75 MHz
- 32 MB Main Memory
- one free serial port
- Mouse, Keyboard, printer with Windows printer driver, e.g. Ink-Jet or Laser-Printer
- 10 MB disk-space
- CD-ROM Drive
- VGA-Card and -Monitor, at least 800x600 Pixels, 256 Colours